

MACHINE SPECIFICATIONS (SELECTION SHEET)

NHM 6300

HORIZONTAL MACHINING CENTER

Draft	Correction		Approval
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DOOSAN INFRACORE CO., LTD.

HORIZONTAL MACHINING CENTER

NHM 6300

MACHINE SPEC. SELECTION SHEET


1. GENERAL SPEIFICATION

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ITEM			UNIT	SPECIFICATION		SELECTION	
CAPACITY	PALLET SIZE		mm	630x630		DEFAULT	
	MAX. WORKPIECE SIZE	DIAMETER	mm	1050			
		HEIGHT	mm	1350			
	MAX. WORKPIECE WEIGHT		kg	1200			
	SPINDLE NOSE TO TABLE CENTER		mm	100 ~ 1100			
	SPINDLE CENTER TO PALLET TOP		mm	75 ~ 925			
MAIN DIMENSION		LENGTH	mm	7240		STD.	
		WIDTH	mm	3930			
		HEIGHT	mm	3493			
MACHINE WEIGHT(NET) ⁽¹⁾			kg	20500			
UTILITY	CONTROL POWER	VOLT/FREQUENCY	V/Hz	200/50		DEFAULT	
				220/60			
				380/50,60			
				400/50,60			
				415/50,60			
				440/50,60			
		PHASE	PH	3			
	REQUIRED POWER CAPACITY		kVA	60	70	STD.	OPT.
	COMPRESSED AIR	PRESSURE	MPa	0.54		DEFAULT	
CONSUMPTION		NL/min	330				
MACHINE COLOR				DOOSAN 4 TONE COLOR MT DARK GRAY(5.3PB 3.0 / 0.4) MT MIDDLE GRAY(1.4RP 4.8 / 0.1) MT LIGHT GRAY(7.3B 7.8 / 0.4) MT BLUE(6.1PB 5.9 / 7.6)		STD.	SELECTIVE
				USER DEFINED		OPT.	
CNC CONTROL			MODEL	FANUC 31i-B		DEFAULT	

(1) SPECIFIED WEIGHT IS BASED ON THE MACHINE WITH EXPORT STADARD SPECIFICATION AND INCLUDING STANDARD ACCESSORIES AND EQUIPMENTS

(2) IF SPINDLE MOTOR IS a22/7000i, THE REQUIRED POWER CAPACITY IS 60KVA. IF SPINDLE MOTOR IS a30/6000i, THE REQUIRED POWER CAPACITY IS 70KVA.

2. SPINDLE HEAD

ITEM		UNIT	SPECIFICATION	SELECTION	
MOTOR	TYPE		α22/7000i	STD.	SELECTIVE
	POWER(CONT./SHORT)	kW	22/35(S3 10%)		
	MAX. SPINDLE SPEED	r/min	6000		
	BASIC SPEED	r/min	192		
	MAX. TORQUE(SHORT TERM)	N.m	1732(S3 10%)		
	TYPE		α30/6000i	OPT.	
	POWER(CONT./SHORT)	kW	30/37(30min)		
	MAX. SPINDLE SPEED	r/min	6000		
	BASIC SPEED	r/min	177		
	MAX. TORQUE(SHORT TERM)	N.m	1991(30min)		
	TYPE		α22/10000i	OPT.	
	POWER(CONT./SHORT)	kW	22/35(S3 15%)		
	MAX. SPINDLE SPEED	r/min	8000		
	BASIC SPEED	r/min	231		
	MAX. TORQUE(SHORT TERM)	N.m	1444(S3 15%)		
SPINDLE TOOL CLAMPING FORCE		kN	27		DEFAULT
ORIENTATION			POSITION CODER		
TAPER TYPE			ISO #50, 7/24 TAPER		
POWER TRANSMISSION			2-STEPS GEAR DRIVEN		
SPINDLE COOLING	TANK CAPACITY	L	40.0		
	CAPACITY	Kcal/h	2992		

3. TABLE

ITEM		UNIT	SPECIFICATION		SELECTION	
1"INDEX	POSITIONING ACCURACY		deg.	±3"	STD.	SELECTIVE
	REPEATABILITY ACCURACY		deg.	±1"		
	MAX. ROTATING SPEED		r/min	15		
	TABLE INDEXING TIME	90°	s	2.0		
		180°	s	3.0		
		360°	s	5.0		
	CLAMPING FORCE ⁽¹⁾		kN	117.0		
0.001" ROTARY (DOOSAN)	POSITIONING ACCURACY		deg.	±6"	OPT.	
	REPEATABILITY ACCURACY		deg.	±4"		
	MAX. ROTATING SPEED		r/min	16		
	CLAMPING TORQUE ⁽¹⁾		N.m	6468		

(1) ACCORDING TO CUTTING PLACE OF WORKPIECE(HEIGHT DIRECTION) MAX. CUTTING CAPACITY CAN BE DIFFERENT.

4. AXES SYSTEM

ITEM			UNIT	SPECIFICATION		SELECTION	
STROKE		X AXIS	mm	1050		DEFAULT	
		Y AXIS	mm	850			
		Z AXIS	mm	1000			
RAPID TRAVERSE		X AXIS	m/min	30	36 ⁽¹⁾	STD.	OPT.
		Y AXIS	m/min	30	36 ⁽¹⁾		
		Z AXIS	m/min	30	36 ⁽¹⁾		
ACCELERATION / DECELERATION TIME		X AXIS	msec	200		STD.	
		Y AXIS	msec	200			
		Z AXIS	msec	200			
MAX. CUTTING FEEDRATE		X AXIS	mm/min	15000	18000	STD.	OPT.
MAX. AXIAL THRUST FORCE(CONTINUOUS/INTERMITTENT)		Z AXIS	kN	18.8/43.4	19.9/68.0		
BALL SCREW(DIAMETER x LEAD)		X AXIS	mm	50x10	50x12		
		Y AXIS	mm	50x10	50x12		
		Z AXIS	mm	50x10	50x12		
ACCURACY	POSITIONING		mm	±0.005/FULL STROKE		DEFAULT	
	REPEATABILITY		mm	±0.002			
DRIVE MOTOR TYPE ⁽¹⁾	X AXIS			α30/3000i	α40/3000i	STD.	OPT.
	Y AXIS			α30B/3000i	α40B/3000i		
	Z AXIS			α30/3000i	α40/3000i		
	B AXIS	INDEX		α12/4000is		STD.	SELECTIVE
		ROTARY		α22/4000is		OPT.	
DRIVE MOTOR POWER (STALL TORQUE) ⁽²⁾	X AXIS			7.0kW (30N.m)	6.0kW (38N.m)	STD.	OPT.
	Y AXIS			7.0kW (30N.m)	6.0kW (38N.m)		
	Z AXIS			7.0kW (30N.m)	6.0kW (38N.m)		
	B AXIS	INDEX		2.7kW (12N.m)		STD.	SELECTIVE
		ROTARY		4.5kW (22N.m)		OPT.	
FEEDBACK SYSTEM	ABSOLUTE PULSE CODER			X,Y,Z,B		DEFAULT	
	LINEAR SCALE	X AXIS				OPT.	SELECTIVE
		Y AXIS				OPT.	
		Z AXIS				OPT.	

(1) IF RAPID TRAVERSE 36m/min IS SELECTED AS OPTION, LEAD OF BALL-SCREW AND DRIVEN MOTOR TYPE MUST BE SELECTED OPTION SPECIFICATION SIMULTANEOUSLY.

(2) THIS VALUE IS BASED ON FANUC SERVO MOTOR.

5. ATC & MAGAZINE

ITEM		UNIT	SPECIFICATION		SELECTION	
TOOL SHANK	PULL STUD		MAS403 BT 50	MAS403 P50T-1(45°)	STD.	SELECTIVE
			CAT 50	MODIFIED CAT(BT SHAPE)	OPT.	
			DIN 69871-A45	DIN 69872 #50	OPT.	
			ISO 12164-1HSK-A100	-	OPT.	
TOOL STORAGE CAPACITY		ea	60		STD.	SELECTIVE
		ea	90		OPT.	
		ea	120		OPT.	
		ea	150		OPT.	
		ea	196 (MATRIX)		OPT.	
		ea	256 (MATRIX)		OPT.	
		ea	316 (MATRIX)		OPT.	
		ea	376 (MATRIX)		OPT.	
TOOL SELECT TYPE			FIXED ADDRESS		DEFAULT	
MAX. TOOL DIAMETER		mm	130 (CONTINOUS.), 320 (ADJACENT POTS EMPTY)			
MAX. TOOL LENGTH		mm	630	700 (HSK)	STD.	OPT.
MAX. TOOL WEIGHT		kg	30			
MAX. TOOL MOMENT		N.m	34.3			
T-T-T TIME		s	2.0 (Heavy tool : 3.5)			
C-T-C TIME		s	7.5 (Heavy tool : 9.0)			

6. APC

ITEM			UNIT	SPECIFICATION	SELECTION	
PALLET SURFACE	TAP PALLET			24-M16xP2.0	STD.	SELECTIVE
	T-SLOT PALLET			5- 18H8	OPT.	
PALLET ROTATION IN SETUP STATION				MANUALLY 90°	DEFAULT	
TWIN PALLET	NUMBER OF PALLET		ea	2		
	MIN. PALLET CHANGE TIME		s	12		
	MAX. WORKPIECE SIZE ⁽¹⁾	HYD. FIXTUTE LINE NONE	mm	Ø1050 x 1350h		
		HYD. FIXTUTE LINE 2 PORT	mm	Ø1050 x 1250h		
		HYD. FIXTUTE LINE 4 PORT	mm	Ø1050 x 1220h		
		HYD. FIXTUTE LINE 6 PORT	mm	Ø1050 x 1190h		
		HYD. FIXTUTE LINE 8 PORT	mm	Ø1050 x 1160h		
	MAX. WORKPIECE WEIGHT		kg	1200		
PALLET CHANGE TYPE			ROTARY SHUTTLES			
7-MULTI PALLET STATION	NUMBER OF PALLET		ea	7	OPT.	SELECTIVE
	MAX. WORKPIECE SIZE		mm	Ø1050 x 1350h		
	MAX. WORKPIECE WEIGHT		kg	1200		
	MAGAZINE TYPE			BUFFER STATION TYPE with CARRIER		
	OPERATION			SCHEDULED OPERATION		
	PALLET DRIVE DEVICE			SERVO MOTOR & REDUCTION GEAR		
	HYDRAULIC POWER UNIT		kW	2.2		
9-MULTI PALLET STATION	NUMBER OF PALLET		ea	9	OPT.	
	MAX. WORKPIECE SIZE		mm	Ø1000 x 1350h		
	MAX. WORKPIECE WEIGHT		kg	1200		
	MAGAZINE TYPE			BUFFER STATION TYPE with CARRIER		
	OPERATION			SCHEDULED OPERATION		
	PALLET DRIVE DEVICE			SERVO MOTOR & REDUCTION GEAR		
	HYDRAULIC POWER UNIT		kW	2.2		
LPS (LINEAR PALLET SYSTEM) ^{*(NOTE.3)}	NUMBER OF PALLET		ea	10	OPT.	
	MAX. WORKPIECE SIZE		mm	Ø1050 x 1350h		
	MAX. WORKPIECE WEIGHT		kg	1200		
	MAGAZINE TYPE			BUFFER STATION TYPE with STACKER CRANE		
	OPERATION			SCHEDULED OPERATION		
	PALLET DRIVE DEVICE			SERVO MOTOR & REDUCTION GEAR		

(1) THIS MAX. WORKPIECE SIZE DEPEND ON THE NUMBER OF PORT ON HYD. FIXTURE LINE.

7. LUBRICATION & HYDRAULIC SYSTEM

ITEM		UNIT	SPECIFICATION	SELECTION
LUBRICATION	TANK CAPACITY(AVAILABLE)	L	7.2	DEFAULT
	PUMP MOTOR POWER	kW	0.057	
	DISCHARGE PRESSURE	MPa	1.7	
	DISCHARGE VOLUME	L/min	0.15	
	DISTRIBUTOR TYPE		METERING	
HYDRAULIC SYSTEM	TANK CAPACITY	L	55	
	MOTOR CAPACITY	kW	3.7	
	OPERATING PRESSURE	MPa	6.0	
	FLOWRATE	L/min	33(60Hz)/27.5(50Hz)	

8. COOLANT SYSTEM

ITEM		UNIT	SPECIFICATION	SELECTION	
FLOOD COOLANT	TANK CAPACITY	L	925	DEFAULT	
	PUMP MOTOR POWER	kW	1.5		
	FILTRATION	mesh	10(TANK SCREEN FILTER)		
	MAX. PRESSURE	MPa	0.68(60Hz)/0.49(50Hz)		
	MAX. FLOWRATE	L/min	30		
	PUMP TYPE		IMMERSION TYPE		
MACHINE FLUSHING COOLANT	TANK CAPACITY	L	STD. TANK COMMON		
	PUMP MOTOR POWER	kW	1.5		
	FILTRATION	mesh	10(TANK SCREEN FILTER)		
	MAX. PRESSURE	MPa	0.29(60Hz)/0.19(50Hz)		
	MAX. FLOWRATE	L/min	100		
	PUMP TYPE		IMMERSION TYPE		
COOLANT SYSTEM 1.91 MPa TSC I	PUMP MOTOR POWER	kW	1.5	OPT.	SELECTIVE
	FILTRATION	μm	20~30(CYCLONE TYPE)		
	MAX. PRESSURE UNDER BLOCKING	MPa	1.91		
	MAX. FLOWRATE WITHOUT TOOL	L/min	20(60Hz)/16.6(50Hz)		
	PUMP TYPE		T-ROTOR TYPE		
COOLANT SYSTEM 2.94 MPa TSC	PUMP MOTOR POWER	kW	3.0	OPT.	
	FILTRATION	μm	20~30(CYCLONE TYPE)		
	MAX. PRESSURE UNDER BLOCKING	MPa	2.94		
	MAX. FLOWRATE WITHOUT TOOL	L/min	20(60Hz)/16.6(50Hz)		
	PUMP TYPE		T-ROTOR TYPE		
COOLANT SYSTEM 6.86 MPa TSC I	PUMP MOTOR POWER	kW	7.5	OPT.	
	FILTRATION	μm	20~30(CYCLONE TYPE)		
	MAX. PRESSURE UNDER BLOCKING	MPa	6.86		
	MAX. FLOWRATE WITHOUT TOOL	L/min	30(60Hz)/25(50Hz)		
	PUMP TYPE		SCREW TYPE		
COOLANT SYSTEM - TSC PREPERATION			WITH OUT PUMP & FILTER ⁽¹⁾	OPT.	
SHOWER COOLANT	PUMP MOTOR POWER	kW	1.5	OPT.	SELECTIVE
	FILTRATION	mesh	10(TANK SCREEN FILTER)		
	MAX. PRESSURE	MPa	0.68(60Hz)/0.49(50Hz)		
	MAX. FLOWRATE	L/min	100		
	PUMP TYPE		IMMERSION TYPE		
COOLANT GUN ⁽²⁾	PUMP MOTOR POWER	kW	0.4	OPT.	SELECTIVE
	FILTRATION	mesh	10(TANK SCREEN FILTER)		
	MAX. PRESSURE	MPa	0.15(60Hz)/0.11(50Hz)		
	MAX. FLOWRATE	L/min	40		
	PUMP TYPE		IMMERSION TYPE		
OIL SKIMMER	TYPE		SUS-BELT	DEFAULT	

(1) THERE ARE COOLANT PIPING INSIDE OF THE MACHINE & ROTATING UNION ON THE SPINDLE HEAD FOR TSC READY.

(2) THIS DEVICE IS OPEARATED BY APC SET-UP DOOR

9. CHIP CONVEYOR & BUCKET

ITEM		UNIT	SPECIFICATION	SELECTION	
CONVEYOR	HINGED PLATE TYPE CONVEYOR	SET		OPT.	SELECTIVE
	MAGNETIC SCRAPER TYPE CONVEYOR	SET		OPT.	
	2 STEP DRUM CHIP CONVEYOR	SET		OPT.	
BUCKET	CAPACITY	L	380	OPT.	SELECTIVE

10. COOLING FOR ELECTRIC CABINET

ITEM		UNIT	SPECIFICATION	SELECTION	
AIR CONDITIONER				OPT.	SELECTIVE

11. ACCESSORIES

ITEM		UNIT	SPECIFICATION	SELECTION	
WORK LIGHT		SET	1-FLUORESCENT LAMP	DEFAULT	
OPERATOR CALL LAMP		SET	3-COLOR SIGNAL TOWER		
INSTALLATION PARTS		SET	1		
SPARE PARTS(FUSES & ETC.)		SET	1		
ASSEMBLY & OPERATION TOOLS		SET	1		
AUTO TOOL LENGTH MEASUREMENT	MAKER/SPEC.	SET	RENISHAW/TS27R ⁽¹⁾	OPT.	SELECTIVE
AUTO TOOL BREAKAGE DETECTION	MAKER/SPEC.	SET	OMRON/D5A ⁽¹⁾	OPT.	
	MAKER/SPEC.	SET	NEEDLE ^{*(NOTE.3)}	OPT.	
AUTO WORKPIECE MEASUREMENT	MAKER/SPEC.	SET	RENISHAW/OMP60	OPT.	SELECTIVE
5TH AXIS PREPARATION		SET	USER DEFINED	OPT.	SELECTIVE
AIR GUN		SET	-	OPT.	SELECTIVE

(1) THIS DEVICE IS UP & DOWN MOVING TYPE.

< NOTE >

- SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.
- ALL SPECIFIED VALUES ARE GIVEN AT STANDARD ELECTRIC POWER CONDITIONS.(60Hz,220V)
- PLEASE INQUIRE DOOSAN INFRACORE R&D DEPARTMENT WHEN END-USER SELECT * MARKS NECESSARILY
- MACHINE DIMENSION AND WEIGHT ARE CHANGED ACCORDING TO OPTIONAL SPECIFICATION.
- PLEASE REFER TO LAY-OUT AND FOUNDATION DRAWING IN RELATION TO INSTALLATION/ELECTRIC DEVICE.
- ALL SPECIFIED VALUES OF PRESSURE AND FLOW RATE OF COOLANT AND HYDRAULIC PUMP ARE GIVEN AT PUMP OUTLET.
- THE FLOWRATE AND THE PRESSURE OF COOLANT ARE GIVEN AT THE CONDITION OF USING WATER SOLUBLE COOLANT.
- SINCE PRESSURE AND FLOWRATE OF T-S-C HAVE INFLUENCE ON TOOL LIFE AND CUTTING CAPABILITY, TYPE OF T-S-C SHOULD BE SELECTED WITH PRUDENCE.
FOR DETAIL SPECIFICATION ABOUT T-S-C , REFER TO CHAPTER II -12-B OF MACHINING CENTER SALES GUIDES.
- REFER TO THE SEPARATED SPEC. SHEETS IN RELATION TO SPECIFICATION, FUNCTION AND OPTION OF CNC CONTROLLER.